

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
30 June 2005 (30.06.2005)

PCT

(10) International Publication Number
WO 2005/060123 A1

(51) International Patent Classification⁷: **H04B 7/06,**
H04L 1/06

(21) International Application Number:
PCT/SE2004/001358

(22) International Filing Date:
22 September 2004 (22.09.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
PCT/SE03/02058
19 December 2003 (19.12.2003) SE

(71) Applicant (for all designated States except US): TELE-
FONAKTIEBOLAGET LM ERICSSON (publ)
[SE/SE]; S-164 83 Stockholm (SE).

(72) Inventors; and

(75) Inventors/Applicants (for US only): LARSSON, Peter

[SE/SE]; Ballonggatan 2, 1 tr., S-169 71 Solna (SE).
SIGNELL, Svante [SE/SE]; Ängsullsvägen 170, S-162
46 Vällingby (SE). ASTELY, David [SE/SE]; S:t Eriks-
gatan 19, 3 tr., S-112 39 Stockholm (SE).

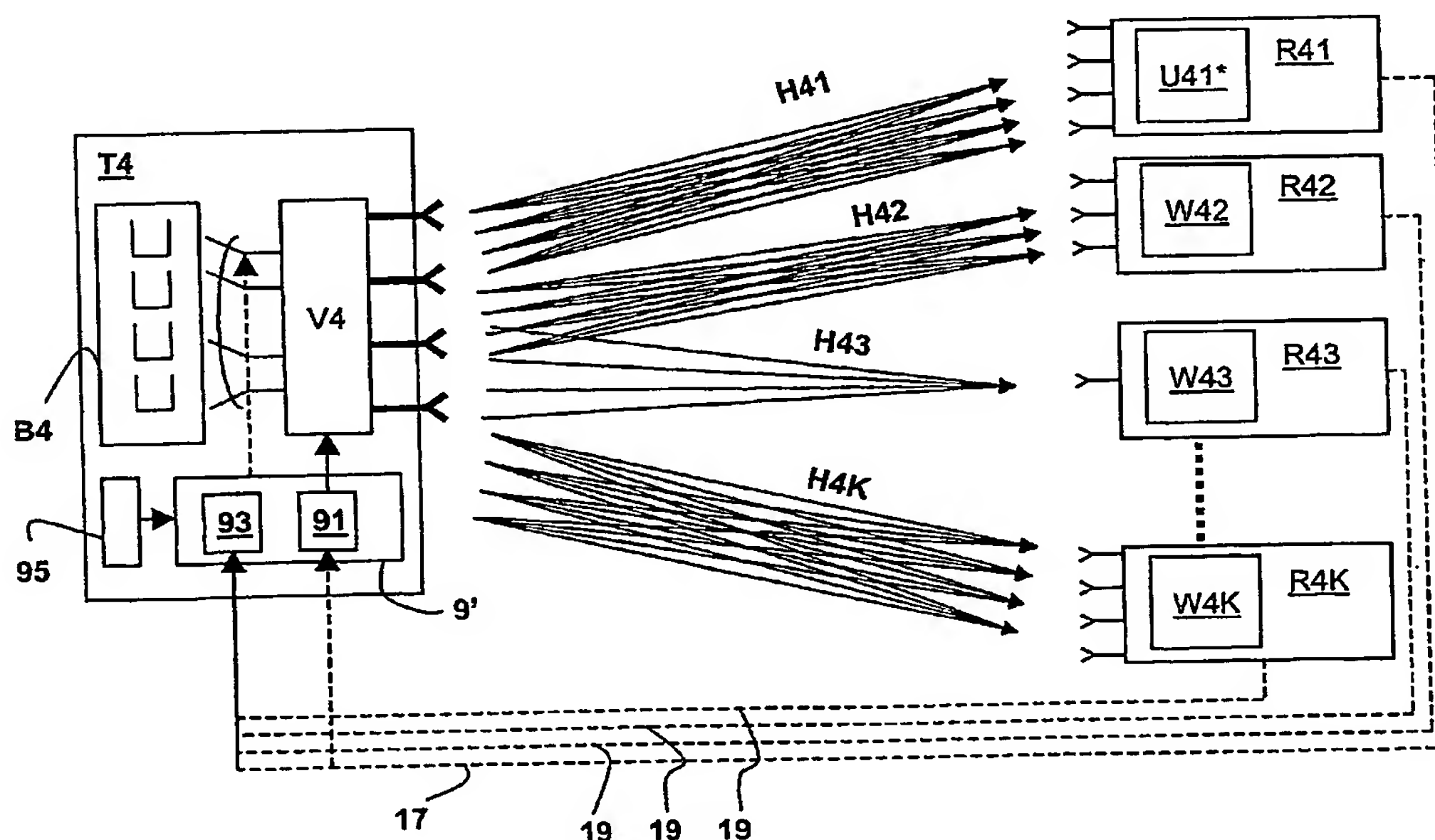
(74) Agent: ALBIHNS STOCKHOLM AB; P.O. Box 5581,
Linnégatan 2, S-114 85 Stockholm (SE).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,

[Continued on next page]

(54) Title: METHOD AND APPARATUS IN A MIMO BASED COMMUNICATION SYSTEM



(57) Abstract: Communication in a MIMO network is optimized by selecting a first set of users comprising at least one user, selecting a second set of users not comprised in the first set, adapting communication parameters for the first set of users according to a first principle suitable, e.g. SVD, adapting communication parameters for the second set of users according to a second principle, e.g. opportunistic MIMO, and transmitting to the first set of user terminals according to the first communication parameters and to the second set of user terminals according to the second communication parameters. In this way, communication with one or a few users can be optimized while network resources can be used in an efficient way also for other users.

WO 2005/060123 A1

WO 2005/060123 A1



FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,
SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

— *with international search report*